

Figure 1

$$R$$
— $Si(OR^1)_3$ + $3H_2O$ — R — $Si(OH)_3$ + $3R^1OH$

Condensation to bond to Silica Substrate

$$R$$
—SiOH + HOSi R —Si—OSi + H₂O OH

Figure 2

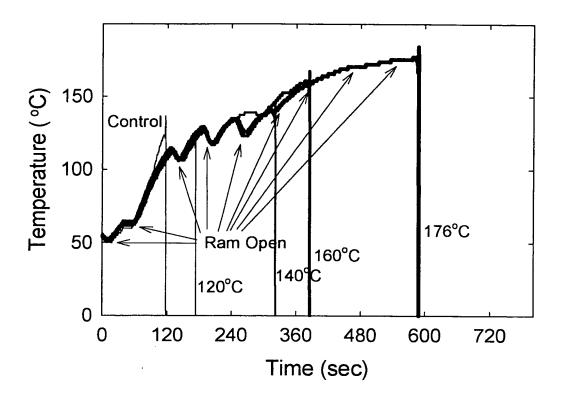
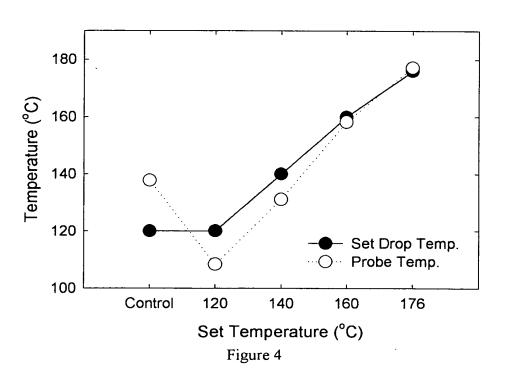


Figure 3



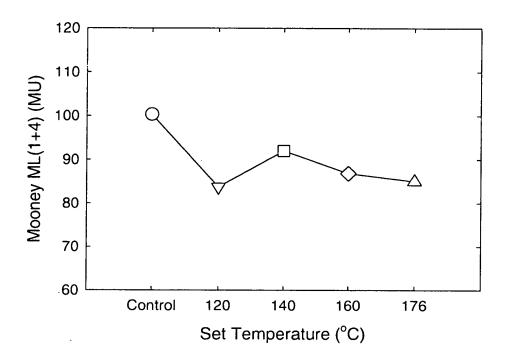


Figure 5

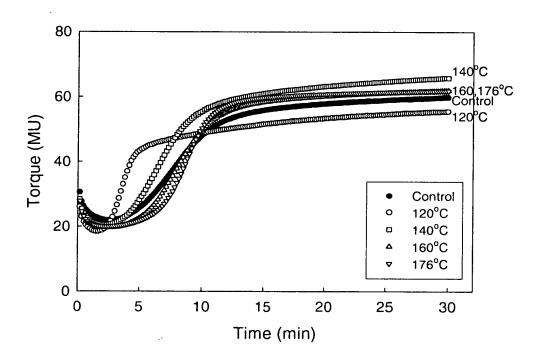


Figure 6

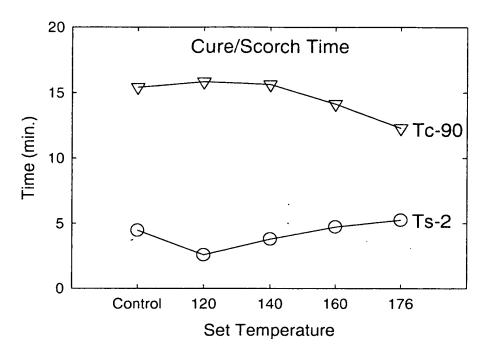


Figure 7

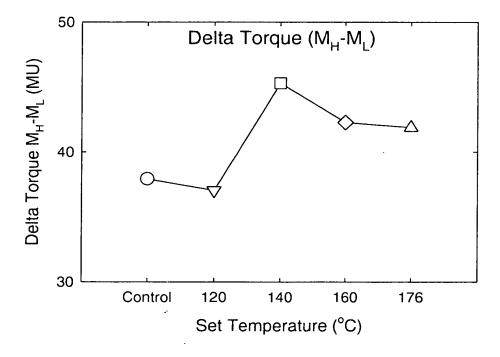


Figure 8

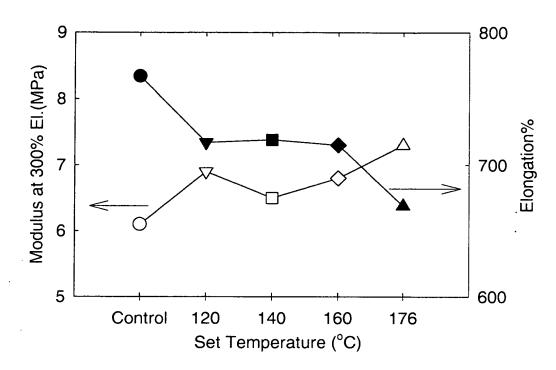


Figure 9

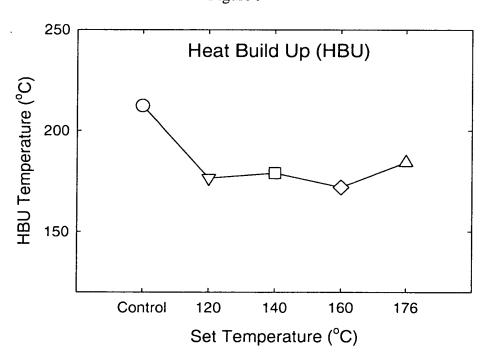


Figure 10

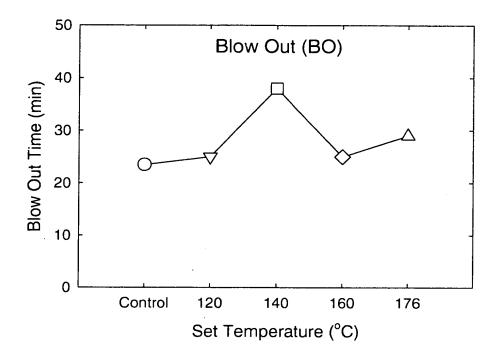


Figure 11

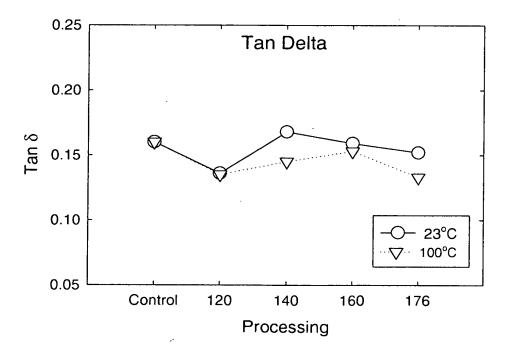


Figure 12

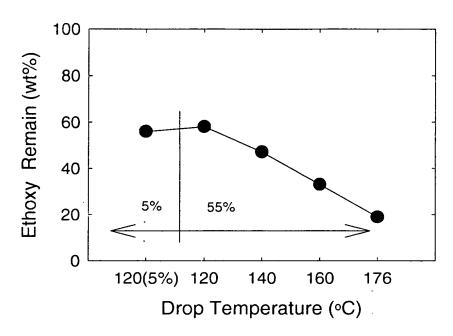


Figure 13

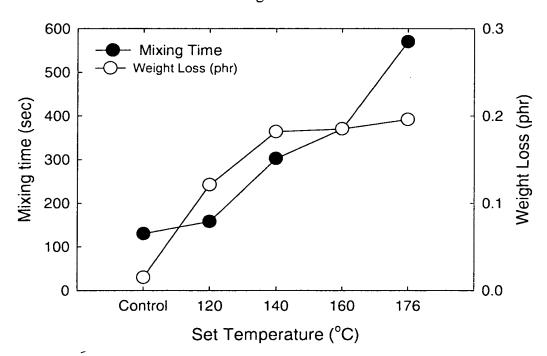


Figure 14